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Version 1.0

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

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Describes features of the motherboard.
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Chapter 2
Installing the Motherboard
Describes installation of motherboard components.
Go to page 7

Chapter 3
Using BIOS
Provides information on using the BIOS Setup Utility.
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Using the Motherboard Software
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Hybrid Graphics® Technology Support
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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the A785GM-M5 motherboard. This motherboard is a high performance, enhanced function motherboard that supports socket for AMD Phenom™ II/Phenom™ processor (socket AM2+)/Athlon™ 64 X2 Dual-Core/ Athlon™ 64/Sempron™ processors for high-end business or personal desktop markets.

The motherboard incorporates the AMD 785G Northbridge (NB) and SB710 Southbridge (SB) chipsets. The Northbridge supports the HyperTransport™ 3.0 interface. The memory controller supports DDR2 memory DIMM frequencies of 1066 (AM2+)/800/667/533/400. It supports two DDR2 slots with maximum memory size of 16 GB*. One PCI Express x16 slot, intended for Graphics Interface, are fully compliant to the PCI Express Gen2 (version 2.0). In addition, one PCI Express x1 slot is supported.

The SB710 Southbridge supports two PCI slots which are PCI v2.3 compliant. It integrates USB 2.0 interface, supporting up to eight functional ports (four USB ports and two USB 2.0 headers support additional four USB ports). One onboard IDE connector supports two IDE devices in Ultra ATA 133/100/66/33 modes. The Southbridge integrates a Serial ATA host controller, supporting six SATA ports with maximum transfer rate up to 3.0 Gb/s each. It provides AMD SATA RAID configuration with RAID 0, 1 and 10 modes supported.

There is an advanced full set of I/O ports in the rear panel, including PS/2 mouse and keyboard connectors, COM, one VGA port, one DVI port, four USB ports, one LAN port and audio jacks for microphone, line-in and line-out.

**Due to the DRAM maximum size (2 GB per dimm) at present, the memory maximum size we have tested is 4 GB.*

Feature

Processor

This motherboard uses a socket AM2+/AM2 that carries the following features:

- Accommodates AMD Phenom™ II/Phenom™ processor (socket AM2+)/ AMD Athlon™ 64X2 Dual-Core/Athlon™ 64/Sempron™ processors
- Supports HyperTransport™ (HT) 3.0 interface speeds

HyperTransport™ Technology is a point-to-point link between two devices, it enables integrated circuits to exchange information at much higher speeds than currently available interconnect technologies.

Chipset

The AMD 785G Northbridge (NB) and SB710 Southbridge (SB) chipsets are based on an innovative and scalable architecture with proven reliability and performance.

AMD 785G (NB)

- One x4 A-Link Express II interface for connection to an AMD Southbridge
- Supports PCIe Gen 2 (version 2.0)
- Proven Radeon™ graphics powering DirectX® 10.1
- Enhanced Digital Display integration
- Fully ACPI 2.0 and IAPC (Instantly Available PC) power management
- Single chip solution in 55nm, 1.1 V CMOS technology
- Integrated ATI Hybrid CrossFire™, ATI Avivo™ HD[1], AMD Cool'n'Quiet™, ATI SurroundView™, AMD OverDrive and AMD PowerNow!

SB710 (SB)

- Compliant with PCI 2.3 specification at 33 MHz
- Supports six Serial ATA devices which speeds up to 3.0 Gb/s
- Integrated USB 2.0 Host Controller supporting up to twelve USB 2.0 ports
- Integrated IDE controller supports Ultra ATA 133/100/ 66/33 modes
- Supports integrated RAID0, RAID1, and RAID 10 (requires use of 4 or more SATA ports) functionalities across all 6 ports

Memory

- Supports DDR2 1066 (AM2+)/800/667/533/400 DDR2 SDRAM with Dual-channel architecture
- Accommodates two unbuffered DIMMs
- Up to 8 GB per DIMM with maximum memory size up to 16 GB*

Onboard LAN (optional)

The onboard LAN controller provides either of the following features:

• PCI Express base 1.1 compliant • Integrated PHY for 10/100/1000 Mbps • IEEE 802.3x compliant flow control support • IEEE 802.3ab Auto-Negotiation support • IEEE 802.3ab PHY compliance and compatibility
• PCI Express base 1.1 compliant • Integrated PHY for 10/100 Mbps • IEEE 802.3x compliant flow control support • IEEE 802.3ab Auto-Negotiation support

Audio

The onboard Audio provides either of the following features:

- 5.1 Channel High Definition Audio Codec
- Exceeds Microsoft Windows Logo Program (WLP) Requirements
- ADCs support 44.1K/48K/88.2K/96K/192KHz sample rate
- Power Support: Digital: 3.3V; Analog: 5.0V

Expansion Options

The motherboard comes with the following expansion options:

- One PCI Express x16 for Graphics Interface
- One PCI Express x1 slot
- Two 32-bit PCI v2.3 compliant slots
- One IDE connector supporting up to two IDE devices
- Six 7-pin SATA connectors

This motherboard supports Ultra DMA bus mastering with transfer rates of 133/100/66/33 MB/s.

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- Two PS/2 ports for mouse and keyboard
- One serial port
- One VGA port
- One DVI port
- Four USB ports
- One LAN port
- Audio jacks for microphone, line-in and line-out

BIOS Firmware

The motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

1. Some hardware specifications and software items are subject to change without prior notice.

2. Due to chipset limitation, we recommend that motherboard be operated in the ambiance between 0 and 50 ° C.

Motherboard Components

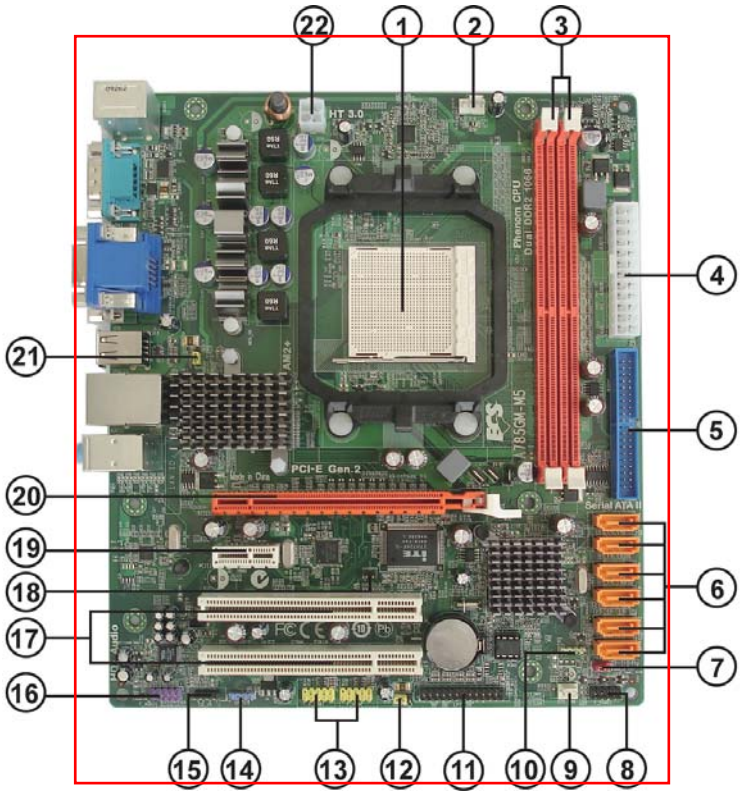


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU Socket	Socket for AMD Phenom™ II/Phenom™ processor (socket AM2+)/AMD Athlon™ 64 X2 Dual-Core/Athlon™ 64/Sempron™ processors
2. CPU_FAN	CPU cooling fan connector
3. DDR2_1~2	240-pin DDR2 SDRAM slots
4. ATX_POWER	Standard 24-pin ATX power connector
5. IDE	Primary IDE connector
6. SATA1~6	Serial ATA connectors
7. CLR_CMOS	Clear CMOS jumper
8. F_PANEL	Front panel switch/LED header
9. SYS_FAN	System cooling fan connector
10. SPK	Speaker header
11. LPT	Onboard parallel port header
12. USBPWR_F	Front Panel USB power select jumper
13. F_USB1~2	Front Panel USB headers
14. SPDIFO	SPDIF out header
15. CD_IN	Analog audio input connector
16. F_AUDIO	Front Panel Audio header
17. PCI1~2	32-bit add-on card slots
18. CASEOPEN	Chassis detect header
19. PCIE1	PCI Express x1 slot
20. PCIEX16	PCI Express x16 graphics card slot
21. USBPWR_R	Rear Panel USB PS/2 power select jumper
22. ATX12V	4-pin +12V power connector

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Chapter 2
Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the Micro ATX system case. Firstly, some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Secondly, this motherboard supports two enhanced IDE drives. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

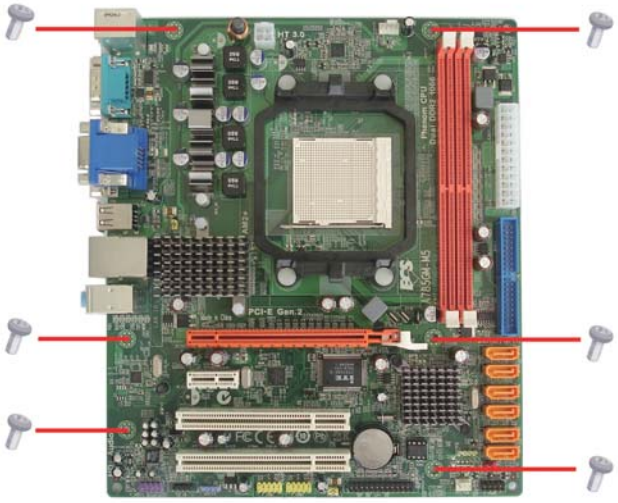
This motherboard carries a Micro ATX form factor of 244 X 210 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



Do not over-tighten the screws as this can stress the motherboard.

Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

Setting Jumpers

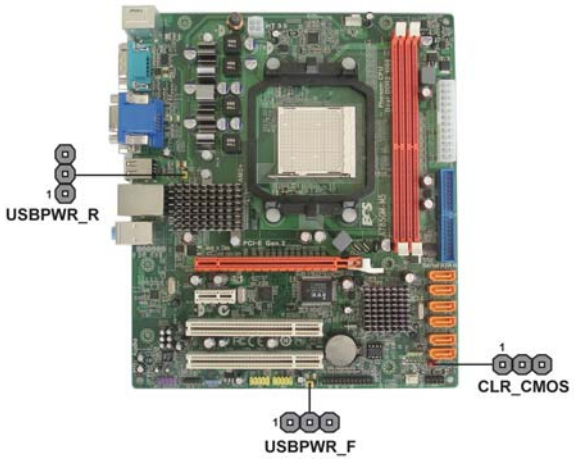
Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT.

Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



Jumper Settings

Jumper	Type	Description	Setting (default)	
CLR_CMOS	3-pin	CLEAR CMOS	1-2: NORMAL 2-3: CLEAR Before clearing the CMOS, make sure to turn the system off.	 1 **CLR_CMOS**
USBPWR_R1	3-pin	Rear USB/PS2 Power Select Jumper	1-2: VCC 2-3: 5VSB	 1 **USBPWR_R1**
USBPWR_F1	3-pin	Front Panel USB Power Select Jumper	1-2: VCC 2-3: 5VSB	 1 **USBPWR_F1**

1. *To avoid the system instability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Default Settings" and then "Save & Exit Setup".*
2. *Make sure the power supply provides enough VCC5_DUAL voltage before selecting the VCC5_DUAL function.*
3. *It is required that users place the USBPWR_F & USBPWR_R cap onto 2-3 pin rather than 1-2 pin as default if you want to wake up the computer by USB/PS2 KB/Mouse.*

Installing Hardware

Installing the Processor

Caution: When installing a CPU heatsink and cooling fan make sure that you DO NOT scratch the motherboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the motherboard, you may cause serious damage to the motherboard or its components.

On most motherboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.

Before installing the Processor

This motherboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change these settings by making changes to jumpers on the motherboard, or changing the settings in the system Setup Utility. We strongly recommend that you do not over-clock processors or other components to run faster than their rated speed.

Warning:

1. Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.

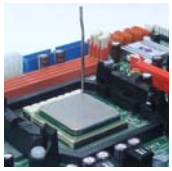
2. Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.

This motherboard has a socket AM2+/AM2 processor socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

CPU Installation Procedure

The following illustration shows CPU installation components.

1 Unhook the locking lever of the CPU socket. Pull the locking lever away from the socket and raising it to the upright position.
2 Match the pin1 corner marked as the beveled edge on the CPU with the pin1 corner on the socket. Insert the CPU into the socket. Do not use force.
3 Push the locking lever down and hook it under the latch on the edge of socket.
4 Apply thermal grease to the top of the CPU.
5 Install the cooling fan/heatsink unit onto the CPU, and secure them all onto the socket base.
6 Plug the CPU fan power cable into the CPU fan connector (CPU_FAN) on the motherboard.



To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 4800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/heatsink supplied. The form and size of fan/heatsink may also vary.

Installing Memory Modules

This motherboard accommodates two memory modules. It can support two 240-pin DDR2 1066 (AM2+)/800/667/533/400. The total memory capacity is 16 GB*.

DDR2 SDRAM memory module table

Memory module	Memory Bus
DDR2 400	***200 MHz***
DDR2 533	***266 MHz***
DDR2 667	***333 MHz***
DDR2 800	***400 MHz***
DDR2 1066	***533 MHz***

You must install at least one module in any of the two slots. Each module can be installed with 8 GB of memory; total memory capacity is 16 GB*.

Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

1. This motherboard supports unbuffered DDR2 SDRAM only.
2. Push the latches on each side of the DIMM slot down.
3. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
4. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
5. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.
6. Install any remaining DIMM modules.

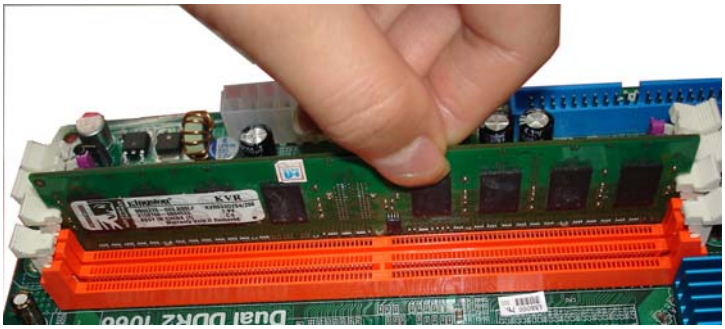


Table A: Unbuffered DIMM Support for Socket AM2+/AM2 CPU

DRAM Speed	DIMM1[1]	DIMM2[1]	Timing Mode
DDR2-400	-	Any	1T
DDR2-400	Any	Any	2T
DDR2-533	-	Any	1T
DDR2-533	SRx16	SRx16	2T
	SRx16	SRx8	
	SRx8	SRx16	
DDR2-533	SRx8	SRx8	2T
DDR2-533	DRx8	DRx8	2T
DDR2-533	DRx8	SRx16	2T
	SRx16	DRx8	
DDR2-533	DRx8	SRx8	2T
	SRx8	DRx8	
DDR2-667	-	Any	1T
DDR2-667	SRx16	SRx16	2T
	SRx16	SRx8	
	SRx8	SRx16	
DDR2-667	SRx8	SRx8	2T
DDR2-667	DRx8	DRx8	2T
DDR2-667	DRx8	SRx16	2T
	SRx16	DRx8	
DDR2-667	DRx8	SRx8	2T
	SRx8	DRx8	
DDR2-800	-	Any	2T
DDR2-800	Any	Any	2T

1 SRx16=Single Rank x16 DIMM
SRx8=Single Rank x8 DIMM
DRx16=Dual Rank x16 DIMM
DRx8=Dual Rank x8 DIMM

The default value is unganged mode when using socket AM2+ CPU.

Table B: DDR2 (memory module) QVL (Qualified Vendor List)

The following DDR2 1066 (AM2+)/800/667/533/400 memory modules have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Module Name
DDR2 533	512 MB	Samsung	PC2-4200U-4444-10-B1
	1 GB	A-data	Vitesta
DDR2 667	512 MB	Micron	MT4HTF6464AY-667E1
	1 GB	Apacer	AU01GE667C5KBGC
			78.01G9O.9K5
		Corsair	VS1GB667D2
		Kingston	KVR667D2N5
		Micron	MT8HTF12864AY-667E1
		PSC	AL7E8E63B-6E1T
			AL7E8F63J-6E1
			AL7E8F73C-6E1
		Samsung	Golden Bar M378T2863DZS 0742
	2 GB	Apacer	78.A1G9O.9K4
		Hynix	HYMP125U64AP8-Y5 AB-A 0623
		Kingston	KVR667D2N5/2G
		LeadMax	PC2-5300U
		PSC	AL8E8F73C-6E1
DDR2 800	1 GB	A-DATA	M2GVD6G3I41P0U1E5E
		Apacer	AU01GE800C5KBGC
			78.01GAO.9K5
			78.01GA0.9L5
		Geil	Geil Millenary
		Hynix	HYMP112U64CP8-S6 AB
		Infinity	04701G16CZ5U2G
		KingMax	KLDD48F-B8KU5 NGES
		Kingston	KVR800D2N5/1G 1.8V 9905316-054.A01LF
		Nanya	NT1GT64U88D0BY-AD
		PSC	AL7E8F73C-8E1
		Ramaxel	RML1320EH38D7F-800
		Samsung	Golden Bar M378T2953EZ3-CE7 0726
			M378T2863EHS-CF7 0849
		Silicon Power	SP001GBLRU800S01
		Transcend	507301-1571
		Unifosa	GU341G0ALEPR6B2C6CE

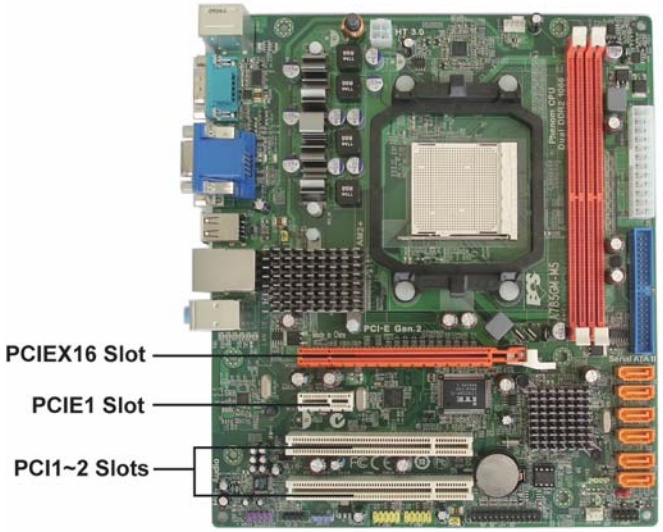
Type	Size	Vendor	Module Name
DDR2 800	2 GB	A-DATA	Red A-DATA M2OMI6H3J4720L1C5Z
		Apacer	78.A1GAO.9K4
			78.A1GC0.9L4
		CORSAIR	CM2X2048-6400C5
		Geil	Geil Platinum Edition
		Hynix	HYMP125U64CP8-S6 AB
		KingMax	KLDE88F-B8KU5 NHES
		Kingston	KVR800D2N5/2G
			KVR800D2N6/2G-SP
		Micron	MT16HTF25664AY-800E1
		Nanya	NT2GT64U8HD0BY-AD
		PSC	AL8E8F73C-8E1
		Samsung	M378T5663QZ3-CF7
			M378T5663EH3-CF7
		Silicon Power	SP002GBLRU800S01
		Unifosa	GU342G0ALEPR692C6CE
	4 GB	Kingston	KVR800D2N6/4G
		Samsung	M378T5263AZ3-CF7 0819
DDR2 1066	1 GB	Infinity	04701G16CY5U2A
		Micron	MT8HTF12864AY-1GAE1
		OCZ	OCZ2RPR 10662GK
	2 GB	Micron	MT16HTF25664AY-1GAE1

Due to the Phenom CPU and memory module limitation, the DRAM may need to adjust the voltage for supporting DDR2 1066. The memory modules which can be used stably are listed in the above QVL table for reference.

Expansion Slots

Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



PCIEX16 Slot The PCI Express x16 slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express® Generation 2.0.

PCIE1 Slot The PCI Express x1 slot is fully compliant to the PCI Express® Generation 2.0.

PCI1~2 Slots This motherboard is equipped with two standard PCI slots. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slots on this board are PCI v2.3 compliant.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

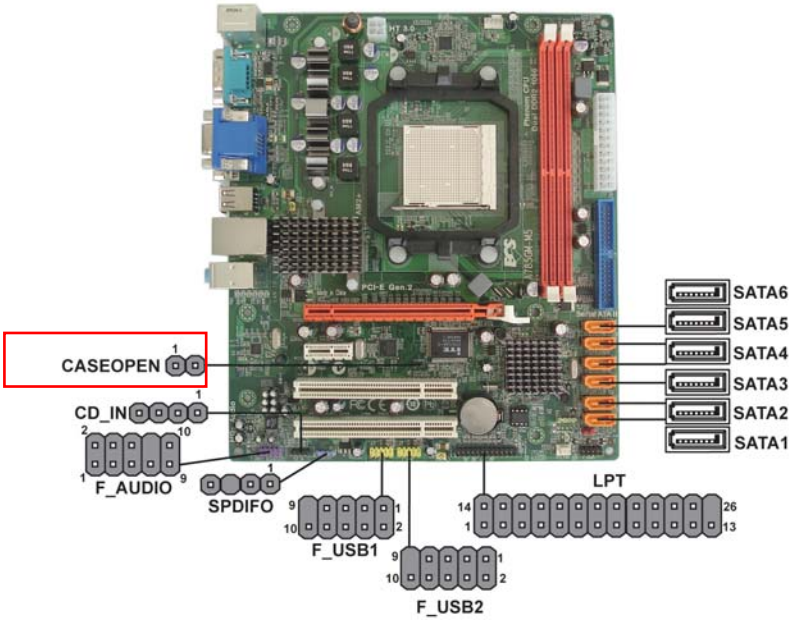
Follow these instructions to install an add-on card:

1 Remove a blanking plate from the system case corresponding to the slot you are going to use.
2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3 Secure the metal bracket of the card to the system case with a screw.

For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:



F_AUDIO: Front Panel Audio header

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	SENSE1_RETURN
7	SENSE_SEND	8	KEY
9	PORT 2L	10	SENSE2_RETURN

SPDIFO: SPDIF out header

This is an optional header that provides an S/PDIF (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.

Pin	Signal Name	Function
1	SPDIF	SPDIF digital output
2	+5VA	5V analog Power
3	Key	No pin
4	GND	Ground

SATA1~6: Serial ATA connectors

These connectors are used to support the new Serial ATA devices for the highest data transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

F_USB1~2: Front Panel USB headers

The motherboard has four USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	USB_FP_OC0	Overcurrent signal

Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

CD_IN: Analog audio input connector

Pin	Signal Name	Function
1	CD_L	Left CD-in signal
2	GND	Ground
3	GND	Ground
4	CD_R	Right CD-in signal

LPT: Onboard parallel port header

This is a header that can be used to connect to the printer, scanner or other devices.

Pin	Signal Name	Function	Pin	Signal Name	Function
1	STB#	Strobe	2	D0	Data 0
3	D1	Data 1	4	D2	Data 2
5	D3	Data 3	6	D4	Data 4
7	D5	Data 5	8	D6	Data 6
9	D7	Data 7	10	ACK#	Acknowledge
11	BUSY	Busy	12	PE	Paper End
13	SLCT	Select	14	AFD#	Auto Feed
15	ERR#	Error	16	INIT#	Initialize
17	SLIN#	Select In	18	GND	Chassis Ground
19	GND	Chassis Ground	20	GND	Chassis Ground
21	GND	Chassis Ground	22	GND	Chassis Ground
23	GND	Chassis Ground	24	GND	Chassis Ground
25	GND	Chassis Ground	26	NC	No pin

CASEOPEN: Chassis Intrusion Detect Header

Pin 1-2	Function
Short	Case Open
Open	Case Close

Installing a Hard Disk Drive/CD-ROM/SATA Hard Drive

This section describes how to install IDE devices such as a hard disk drive and a CD-ROM drive.

About IDE Devices

Your motherboard has one IDE interface. An IDE ribbon cable supporting two IDE devices is bundled with the motherboard.

You must orient the cable connector so that the pin1 (color) edge of the cable corresponds to the pin 1 of the I/O port connector.

IDE: IDE Connector

This motherboard supports six high data transfer SATA ports with each runs up to 3.0 Gb/s. To get better system performance, we recommend users connect the CD-ROM to the IDE channel, and set up the hard dives on the SATA ports.

IDE devices enclose jumpers or switches used to set the IDE device as MASTER or SLAVE. Refer to the IDE device user's manual. Installing two IDE devices on one cable, ensure that one device is set to MASTER and the other device is set to SLAVE. The documentation of your IDE device explains how to do this.

About SATA Connectors

Your motherboard features six SATA connectors supporting a total of six drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with a SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

SATA cable (optional)

SATA power cable (optional)

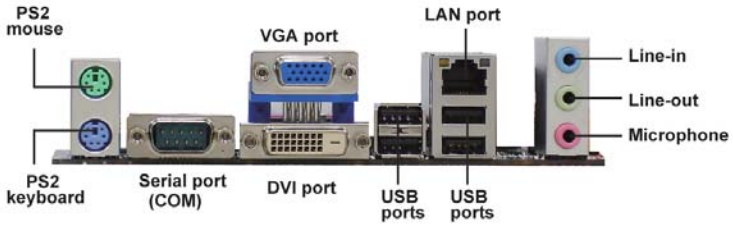
Refer to the illustration below for proper installation:

1 Attach either cable end to the connector on the motherboard.
2 Attach the other cable end to the SATA hard drive.
3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.

This motherboard supports the "Hot-Plug" function.

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:

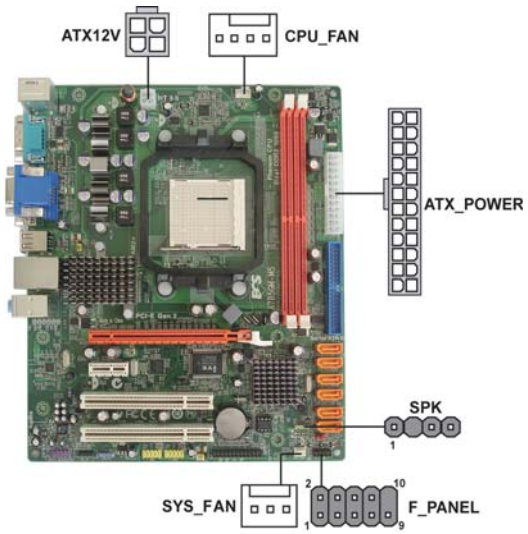


PS2 Mouse	Use the upper PS/2 port to connect a PS/2 pointing device.
PS2 Keyboard	Use the lower PS/2 port to connect a PS/2 keyboard.
Serial Port (COM)	Use the COM port to connect serial devices such as mouse or fax/modems.
VGA Port	Connect your monitor to the VGA port.
DVI Port	Connect the DVI port to connect the monitor.
USB Ports	Use the USB ports to connect USB devices.
LAN Port	Connect an RJ-45 jack to the LAN port to connect your computer to the network.
Audio Ports	Use the three audio ports to connect audio devices. The first jack is for stereo line-in signal. The second jack is for stereo line-out signal. The third jack is for microphone.

Connecting Case Components

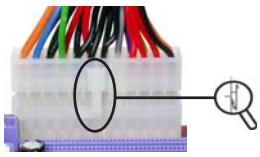
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1. Connect the CPU cooling fan cable to **CPU_FAN**.
2. Connect the standard power supply connector to **ATX_POWER**.
3. Connect the case speaker cable to **SPK**.
4. Connect the case switches and indicator LEDs to the **F_PANEL**.
5. Connect the system cooling fan connector to **SYS_FAN**.
6. Connect the auxiliary case power supply connector to **ATX12V**.



1. Connecting 24-pin power cable

The ATX 24-pin connector allows you to connect to ATX v2.x power supply.

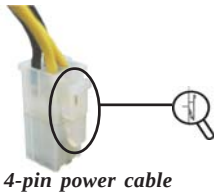


With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX_POWER match perfectly.

24-pin power cable

2. Connecting 4-pin power cable

The ATX12V power connector is used to provide power to the CPU.



When installing 4-pin power cable, the latches of power cable and the ATX12V match perfectly.

4-pin power cable

CPU_FAN: FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	CPU FAN control

Users please note that the fan connector supports the CPU cooling fan of 1.1A~2.2A (26.4W max.) at +12V.

SYS_FAN: FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

ATX_POWER: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	COM
4	+5V	16	PS_ON
5	Ground	17	COM
6	+5V	18	COM
7	Ground	19	COM
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	COM

ATX12V: ATX 12V Power Connector

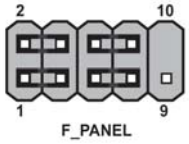
Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

SPK: Internal speaker

Pin	Signal Name
1	VCC
2	Key
3	NC
4	Signal

Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or Micro ATX cases. Refer to the table below for information:



F_PANEL

Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (+)	2	FP PWR/SLP	*MSG LED (+)
3	HD_LED_N	Hard disk LED (-)	4	FP PWR/SLP	*MSG LED (-)
5	RST_SW_N	Reset Switch (-)	6	PWR_SW_P	Power Switch (+)
7	RST_SW_P	Reset Switch (+)	8	PWR_SW_N	Power Switch (-)
9	RSVD	Reserved	10	Key	No pin

** MSG LED (dual color or single color)*

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.

Chapter 3
Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc. " BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

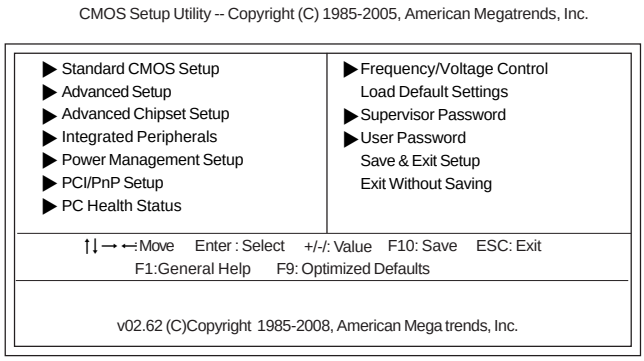
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Press the delete key to access the BIOS Setup Utility.


CMOS Setup Utility -- Copyright (C) 1985-2005, American Megatrends, Inc.
▶ Standard CMOS Setup
▶ Advanced Setup
▶ Advanced Chipset Setup
▶ Integrated Peripherals
▶ Power Management Setup
▶ PCI/PnP Setup
▶ PC Health Status
▶ Frequency/Voltage Control
Load Default Settings
▶ Supervisor Password
▶ User Password
Save & Exit Setup
Exit Without Saving
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults
v02.62 (C)Copyright 1985-2008, American Mega trends, Inc.

Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.

Auto-Detecting 4th Slave...IDE Hard Disk
4th Slave : ST3120827AS 3.42
Ultra DMA Mode-5, S.M.A.R.T. Capable and Status
CMOS Settings Wrong
CMOS Date/Time Not Set
Press F1 to Run SETUP

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
▸ Standard CMOS Setup
▸ Advanced Setup
▸ Advanced Chipset Setup
▸ Integrated Peripherals
▸ Power Management Setup
▸ PCI/PnP Setup
▸ PC Health Status
▸ Frequency/Voltage Control
Load Default Settings
▸ Supervisor Password
Save & Exit Setup?
[Ok] [Cancel]
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Load Default Settings
v02.63 (C)Copyright 1985-2008, American Megatrends, Inc.

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ▶) lead to sub menus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the sub menu.

In this manual, default values are enclosed in parenthesis. Sub menu items are denoted by a triangle ▶.

The default BIOS setting for this motherboard applies for most conditions with optimum performance. It is not suggested to change the default values in the BIOS setup and the manufacture takes no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

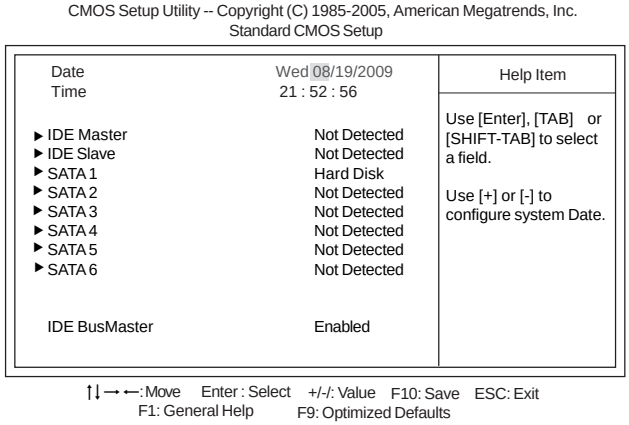
The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓→←	Scrolls through the items on a menu
+/-	Modifies the selected field's values
Enter	Select
F9	Loads an optimized setting for better performance
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions

For the purpose of better product maintenance, the manufacture reserves the right to change the BIOS items presented in this manual. The BIOS setup screens shown in this chapter are for reference only and may differ from the actual BIOS. Please visit the manufacture's website for updated manual.

Standard CMOS Setup

This option displays basic information about your system.

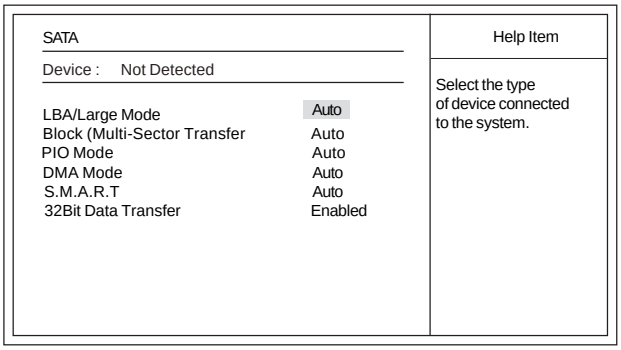

CMOS Setup Utility -- Copyright (C) 1985-2005, American Megatrends, Inc.
Standard CMOS Setup
Date Wed 08/19/2009
Time 21 : 52 : 56
Help Item
▶ IDE Master Not Detected
▶ IDE Slave Not Detected
▶ SATA 1 Hard Disk
▶ SATA 2 Not Detected
▶ SATA 3 Not Detected
▶ SATA 4 Not Detected
▶ SATA 5 Not Detected
▶ SATA 6 Not Detected
IDE BusMaster Enabled
Use [Enter], [TAB] or [SHIFT-TAB] to select a field.
Use [+] or [-] to configure system Date.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

▶ IDE Master/Slave, SATA1~6

Your computer has one IDE channel which can be installed with one or two devices (Master and Slave). In addition, this motherboard supports six SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the IDE channel.


CMOS SETUP UTILITY – Copyright (C) 1985-2005, American Megatrends, Inc.
IDE Master
SATA
Device : Not Detected
Help Item
LBA/Large Mode Auto
Block (Multi-Sector Transfer Auto
PIO Mode Auto
DMA Mode Auto
S.M.A.R.T Auto
32Bit Data Transfer Enabled
Select the type of device connected to the system.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

LBA/Large Mode (Auto)

Use this item to set the LAB/Large mode to enhance hard disk performance by optimizing the area the hard disk is visited each time.

Block (Multi-Sector Transfer (Auto)

If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode (Auto)

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

DMA Mode (Auto)

DMA capability allows user to improve the transfer-speed and data-integrity for compatible IDE devices.

S.M.A.R.T. (Auto)

The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.

32Bit Data Transfer (Enabled)

Use this item to set the onboard SATA-IDE channel to be disabled, IDE, or RAID.

Press <Esc> to return to the Standard CMOS Setup page.

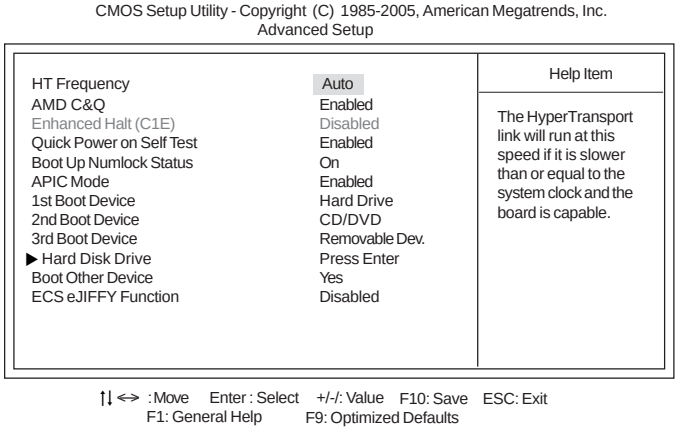
IDE BusMaster (Enabled)

This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

Press <Esc> to return to the main menu setting page.

Advanced Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.



HT Frequency (Auto)

This item enables users to adjust the HT frequency. The default setting is auto and we recommend users leave the setting unchanged. Modify it at will may cause the system to be unstable.

AMD C&Q (Enabled)

This item helps the system to lower the frequency when CPU idles. When the frequency decreases, the temperature will drop automatically as well.

Enhanced Halt (C1E) (Disabled)

This item enables or disables enhanced halt.

Quick Power on Self Test (Enabled)

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

Boot Up Numlock Status (ON)

This item defines if the keyboard Num Lock key is active when your system is started.

APIC Mode (Enabled)

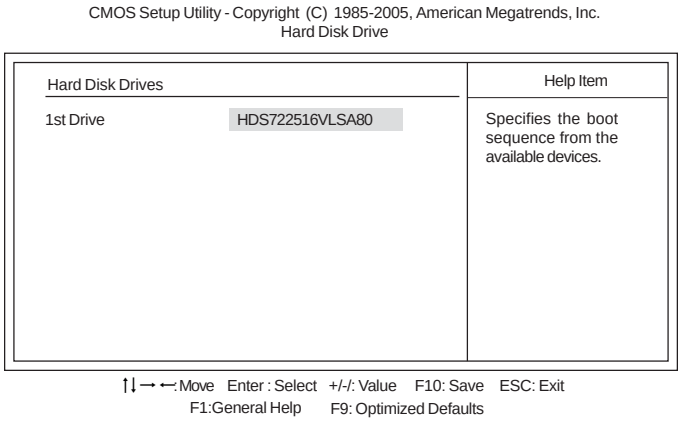
This item allows you to enable or disable the APCI (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

1st/2nd/3rd Boot Device (Hard Drive/CD/DVD/Removable Dev.)

Use this item to determine the device order the computer used to look for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on your motherboard.

►Hard Disk Drive (Press Enter)

Scroll to this item and press <Enter> to view the following screen:


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Hard Disk Drive
Hard Disk Drives
1st Drive
HDS722516VLSA80
Help Item
Specifies the boot sequence from the available devices.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Press <Esc> to return to the Advanced setup page.

Boot Other Device (Yes)

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second and Third boot devices.

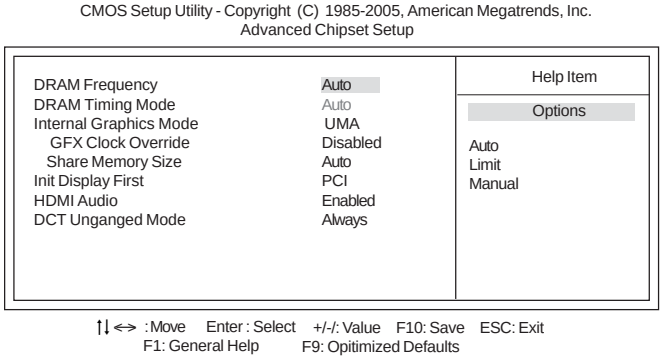
ECS eJIFFY Function (Disabled)

Use this item to enable or disable the ECS eJIFFY Function. eJIFFY is ECS unique software program for the quick access to the internet without entering O.S. Please refer to Chapter 6 to know more about eJIFFY.

Press <Esc> to return to the main menu setting page.

Advanced Chipset Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.



DRAM Frequency (Auto)

This item enables users to adjust the DRAM frequency. The default setting is auto andwe recommend users leave the setting unchanged. Modify it at will may cause thesystem to be unstable.

DRAM Timing Mode (Auto)

This item enables you to specify the DRAM timing mode to be configured automatically or manually.

Internal Graphics Mode (UMA)

Use this item to choose the onboard VGA mode. You can select [Disabled] to disablethe onboard VGA, [UMA] to use the system memory.

Warning: If Disabled Internal Graphics Mode, please Loading default toEnable it.

GFX Clock Override (Disabled)

Use this item to enable or disable GFX Clock Override.

Share Memory Size (Auto)

This item lets you allocate a portion of the main memory for the onboard VGA display application.

Init Display First (PCI)

Use this item to select which graphics controller to use as the primary boot devices.

HDMI Audio (Enabled)

This item is used to enable or disable the NB HDMI audio support.

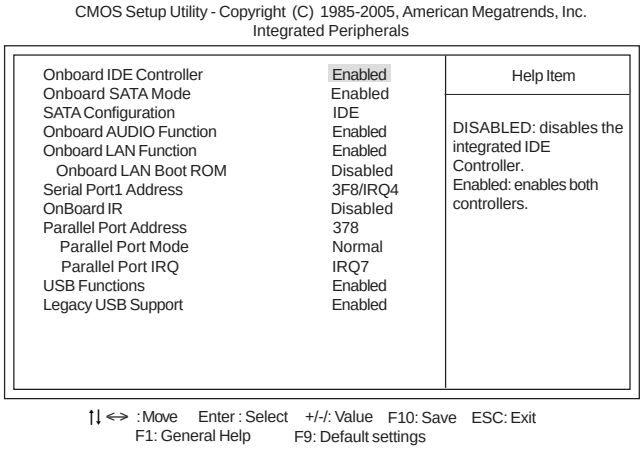
DCT Unganged Mode (Always)

This item is used to select the DCT mode (DRAM Controller mode).

Press <Esc> to return to the main menu setting page.

Integrated Peripherals

This page sets up some parameters for peripheral devices connected to the system.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Integrated Peripherals
Onboard IDE Controller Enabled
Onboard SATA Mode Enabled
SATA Configuration IDE
Onboard AUDIO Function Enabled
Onboard LAN Function Enabled
Onboard LAN Boot ROM Disabled
Serial Port1 Address 3F8/IRQ4
OnBoard IR Disabled
Parallel Port Address 378
Parallel Port Mode Normal
Parallel Port IRQ IRQ7
USB Functions Enabled
Legacy USB Support Enabled
Help Item
DISABLED: disables the integrated IDE Controller.
Enabled: enables both controllers.
↑↓ <-> : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Default settings

Onboard IDE Controller (Enabled)

Use this item to enable or disable the onboard IDE interface.

Onboard SATA Mode (Enabled)

Use this item to enable or disable the build-in on-chip Serial ATA.

SATA Configuration (IDE)

Use this item to select the type of the build-in on-chip Serial ATA.

Onboard AUDIO Function (Enabled)

Use this item to enable or disable the onboard Audio function.

Onboard LAN Function (Enabled)

Use this item to enable or disable the onboard LAN function.

Onboard LAN Boot ROM (Disabled)

Use this item to enable or disable the booting from the onboard LAN or a network add-in card with a remote boot ROM installed.

Serial Port1 Address (3F8/IRQ4)

Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.

OnBoard IR (Disabled)

Use this item to enable or disable the onboard infrared port, and to assign a port address.

Parallel Port Address (378)

Use this item to enable or disable the onboard Parallel port, and to assign a port address.

Parallel Port Mode (Normal)

Use this item to select the parallel port mode. You can select Normal (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or BPP (Bi-Directional Parallel Port).

Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

USB Functions (Enabled)

Use this item to enable or disable the USB function.

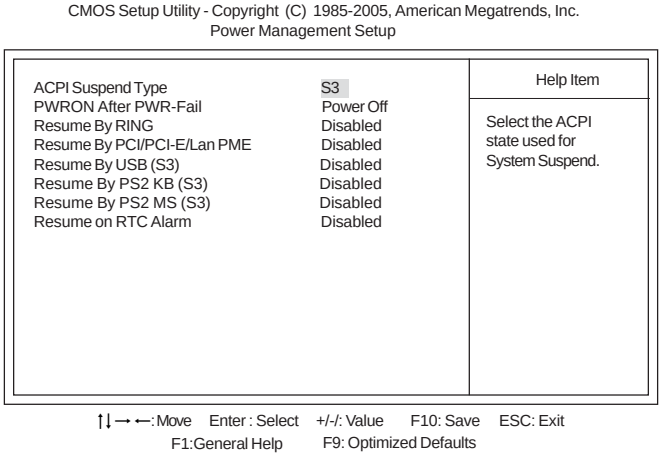
Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices.

Press <Esc> to return to the main menu setting page.

Power Management Setup

This page sets up some parameters for system power management operation.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Power Management Setup
ACPI Suspend Type S3
PWRON After PWR-Fail Power Off
Resume By RING Disabled
Resume By PCI/PCI-E/Lan PME Disabled
Resume By USB (S3) Disabled
Resume By PS2 KB (S3) Disabled
Resume By PS2 MS (S3) Disabled
Resume on RTC Alarm Disabled
Help Item
Select the ACPI state used for System Suspend.
↑↓→←: Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

ACPI Suspend Type (S3(STR))

Use this item to define how your system suspends. In the default, S3, the suspend mode is a suspend to RAM, i.e, the system shuts down with the exception of a refresh current to the system memory.

PWRON After PWR-Fail (Power Off)

This item enables your computer to automatically restart or return to its operating status.

Resume By Ring (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem. You must use an ATX power supply in order to use this feature.

Resume By PCI/PCI-E/Lan PME (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the PCI Modem or PCI LAN card. You must use an ATX power supply in order to use this feature. Use this item to do wake-up action if inserting the PCI card.

Resume By USB (S3) (Disabled)

This item allows you to enable/disable the USB device wakeup function from S3 mode.

Resume By PS2 KB (S3) (Disabled)

This item enables or disables you to allow keyboard activity to awaken the system from power saving mode.

Resume By PS2 MS (S3) (Disabled)

This item enables or disables you to allow mouse activity to awaken the system from power saving mode.

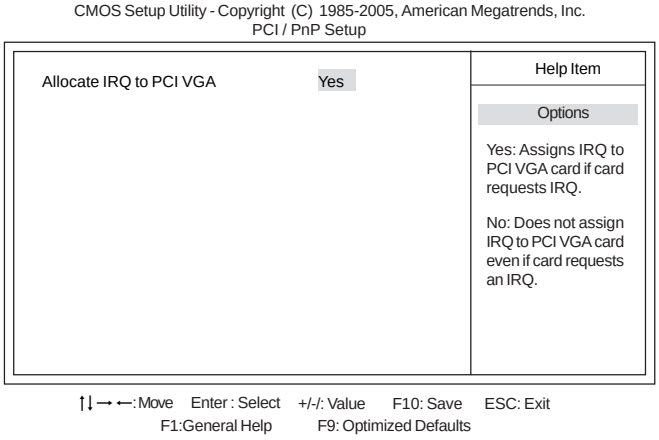
Resume on RTC Alarm (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

Press <Esc> to return to the main menu setting page.

PCI / PnP Setup

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
PCI / PnP Setup
Allocate IRQ to PCI VGA
Yes
Help Item
Options
Yes: Assigns IRQ to PCI VGA card if card requests IRQ.
No: Does not assign IRQ to PCI VGA card even if card requests an IRQ.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

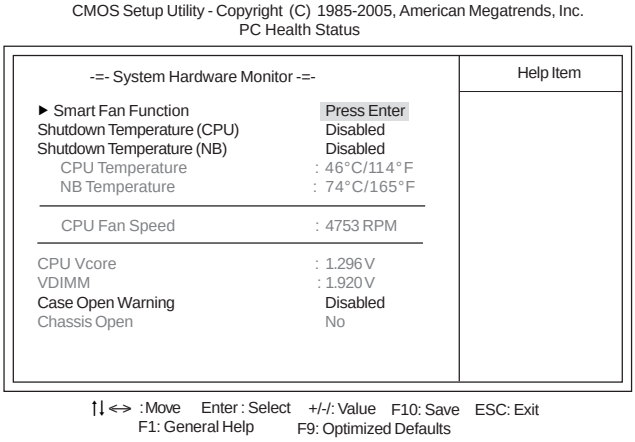
Allocate IRQ to PCI VGA (Yes)

If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system. You set this value to No to free up an IRQ.

Press <Esc> to return to the main menu setting page.

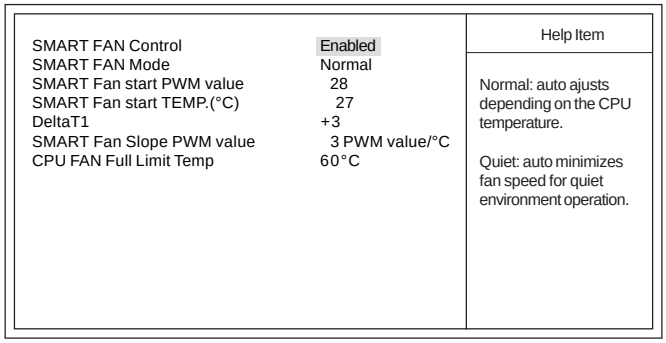
PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.



▶ Smart Fan Function

Scroll to this item and press <Enter> to view the following screen:

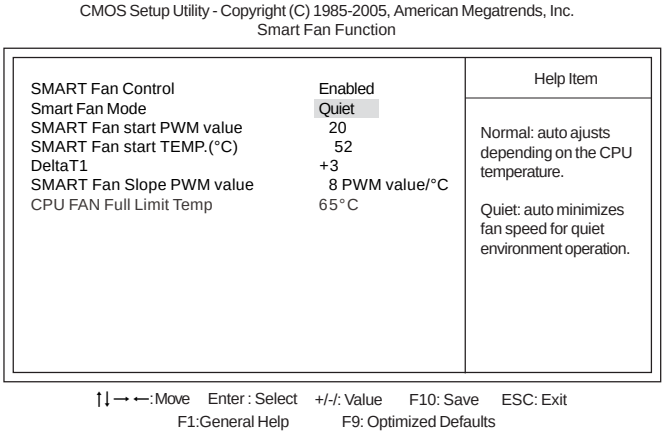


SMART FAN Control (Enabled)

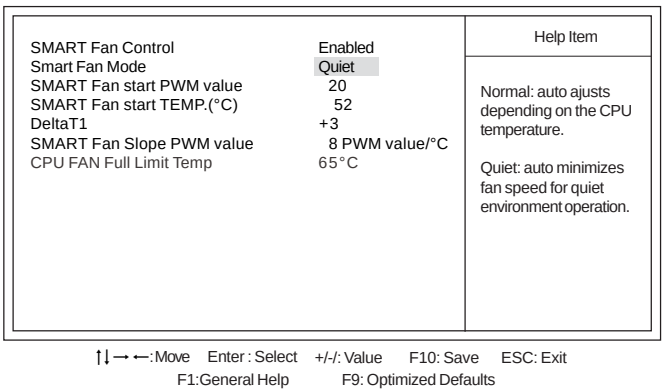
This item allows you to enable/disable the control of the system fan speed by changing the fan voltage.

SMART Fan Mode (Normal)

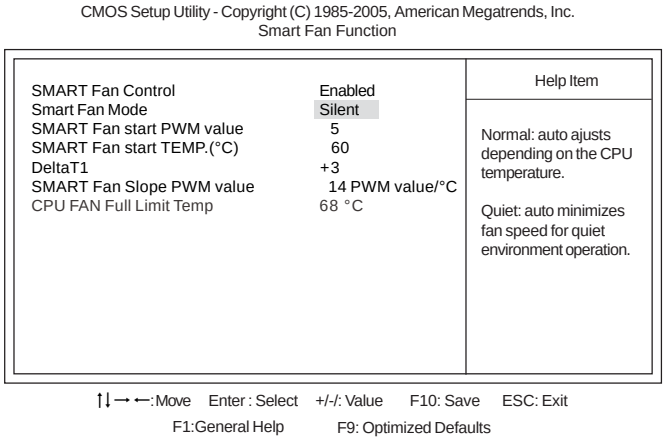
This item allows you to select the fan mode (Normal, Quiet, Silent, or Manual) for a better operation environment. If you choose Normal mode, the fan speed will be auto adjusted depending on the CPU temperature. If you choose Quite mode, the fan speed will be auto minimized for quiet environment. If you choose Silent mode, the fan speed will be auto restricted to make system more quietly. If you choose Manual mode, the fan speed will be adjust depending on users' parameters.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function
SMART Fan Control Enabled
Smart Fan Mode Quiet
SMART Fan start PWM value 20
SMART Fan start TEMP.(°C) 52
DeltaT1 +3
SMART Fan Slope PWM value 8 PWM value/°C
CPU FAN Full Limit Temp 65°C
Help Item
Normal: auto ajusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

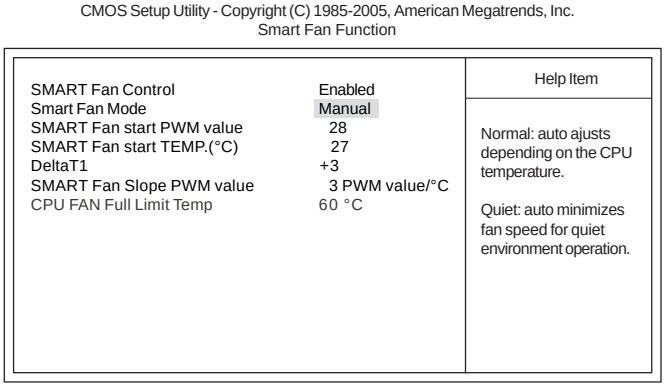
Press <Esc> to return to the Smart Fan Function page.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function
SMART Fan Control Enabled
Smart Fan Mode Quiet
SMART Fan start PWM value 20
SMART Fan start TEMP.(°C) 52
DeltaT1 +3
SMART Fan Slope PWM value 8 PWM value/°C
CPU FAN Full Limit Temp 65°C
Help Item
Normal: auto ajusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Press <Esc> to return to the Smart Fan Function page.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function
SMART Fan Control Enabled
Smart Fan Mode Silent
SMART Fan start PWM value 5
SMART Fan start TEMP.(°C) 60
DeltaT1 +3
SMART Fan Slope PWM value 14 PWM value/°C
CPU FAN Full Limit Temp 68 °C
Help Item
Normal: auto ajusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Press <Esc> to return to the Smart Fan Function page.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function
SMART Fan Control Enabled
Smart Fan Mode Manual
SMART Fan start PWM value 28
SMART Fan start TEMP.(°C) 27
DeltaT1 +3
SMART Fan Slope PWM value 3 PWM value/°C
CPU FAN Full Limit Temp 60 °C
Help Item
Normal: auto ajusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Press <Esc> to return to the Smart Fan Function page.

SMART Fan start PWM value (28)

This item is used to set the start PWM value of the smart fan.

SMART Fan start TEMP. (°C) (27)

This item is used to set the start temperature of the smart fan.

DeltaT1 (+3)

This item specifies the range that controls CPU temperature and keeps it from going so high or so low when smart fan works.

SMART Fan Slope PWM value (8 PWM value/°C)

This item is used to set the Slope Select PWM of the smart fan.

CPU FAN Full Limit Temp (65°C)

This item is used to set the limit temperature of the smart fan.

Press <Esc> to return to the PC Health Status page.

Shutdown Temperature (CPU)

Enable you to set the maximum temperature the CPU can reach before powering down

Shutdown Temperature (NB)

Enable you to set the maximum temperature the NB can reach before powering down

System Component Characteristics

These items display the monitoring of the overall inboard hardware health events, such as System & CPU temperature, CPU & DIMM voltage, CPU & system fan speed,...etc.

- CPU Temperature
- NB Temperature
- CPU Fan Speed
- CPU Vcore
- VDIMM

Press <Esc> to return to the main menu setting page.

Case Open Warning (Disabled)

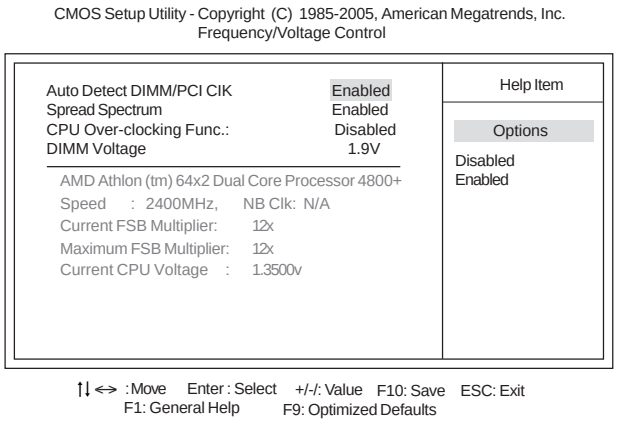
This item enables or disables the warning if the case is opened up, and the itembelow indicates the current status of the case.

Chassis Opened (No)

This item indicates whether the case has been opened.

Frequency/Voltage Control

This page enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.



Auto Detect DIMM/PCI Clk (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Spread Spectrum (Disabled)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

CPU Over-clocking Func. (Enabled)

This item decides the CPU over-clocking function installed in your system. If the over-clocking fails, please turn off the system power. And then, hold the PageUp key (similar to the Clear CMOS function) and turn on the power, the BIOS will recover the safe default.

DIMM Voltage (Disabled)

This item allows users to adjust the DIMM voltage.

Incorrectly doing overclock/overvoltage may result in damage to CPU, chipset, or memory and reduce the useful life of these components. This function is for advanced users only and we recommend you not to alter the default settings to prevent system instability or other unexpected results. (Enable for AM2+ / Disable for AM2)

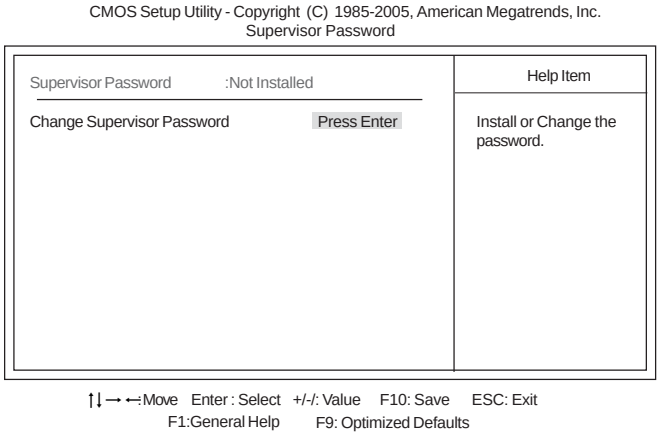
Press <Esc> to return to the main menu setting page.

Load Default Settings

This option opens a dialog box to ask if you are sure to install optimized defaults or not. You select [OK], and then press <Enter>, the Setup Utility loads all default values; or select [Cancel], and then press <Enter>, the Setup Utility does not load default values.

Supervisor Password

This page helps you install or change a password.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Supervisor Password
Supervisor Password :Not Installed
Change Supervisor Password
Press Enter
Help Item
Install or Change the password.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Supervisor Password (Not Installed)

This item indicates whether a supervisor password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

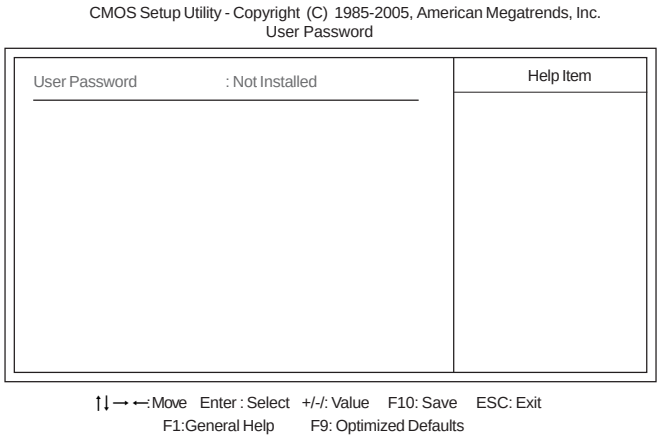
Change Supervisor Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Press <Esc> to return to the main menu setting page.

User Password

This page helps you install or change a password.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
User Password
User Password : Not Installed
Help Item
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

User Password (Not Installed)

This item indicates whether a user password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

Press <Esc> to return to the main menu setting page.

Save & Exit Setup

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, select [OK] to save and exit, or select [Cancel] to return to the main menu.

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, select [OK] to discard changes and exit, or select [Cancel] to return to the main menu.

If you have made settings that you do not want to save, use the "Exit Without Saving" item and select [OK] to discard any changes you have made.

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
3. Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the bootable device.
5. Turn off your computer and insert the bootable device in your computer. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first.)
6. At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new bios and then press <Enter>. Example: afudos 780D725.ROM /b /p /n /c /x
7. When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Chapter 4
Using the Motherboard Software

About the Software DVD-ROM/CD-ROM

The support software DVD-ROM/CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT or something similar. These files may contain important information that is not included in this manual.

1. *Never try to install all software from folder that is not specified for use with your motherboard.*
2. *The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center "before" installing HD audio driver bundled in the Driver CD. Please log on to http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto for more information.*

Auto-installing under Windows XP/Vista/7

The Auto-install DVD-ROM/CD-ROM makes it easy for you to install the drivers and software for your motherboard.

If the Auto-install DVD-ROM/CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software DVD-ROM/CD-ROM disc loads automatically under Windows XP/Vista/7. When you insert the DVD-ROM/CD-ROM disc in the DVD-ROM/CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.

If the opening screen does not appear; double-click the file "setup.exe" in the root directory.

Setup Tab

Setup	Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support disk. Before installing the software from Windows Explorer, look for a file named README.TXT or something similar. This file may contain important information to help you install the software correctly. Some software is installed in separate folders for different operating systems, such as Windows XP/Vista/7. Always go to the correct folder for the kind of OS you are using. In install the software, execute a file named SETUP.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The **EXIT** button closes the Auto Setup window.

Application Tab

Lists the software utilities that are available on the disk.

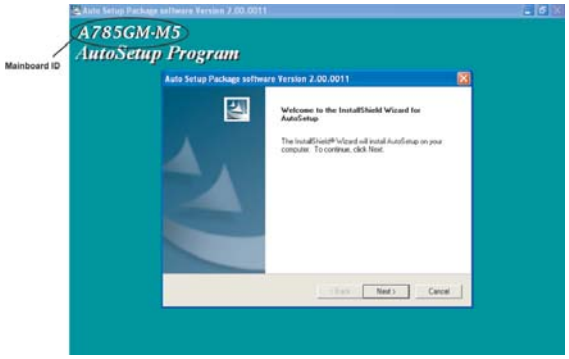
Read Me Tab

Displays the path for all software and drivers available on the disk.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

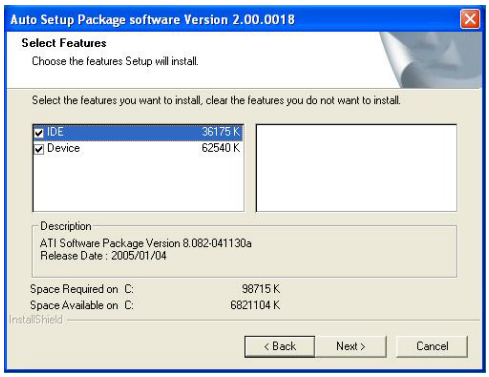
1. *Click **Setup**. The installation program begins:*



The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

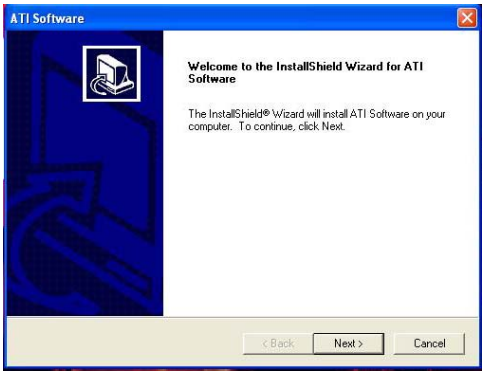
The motherboard identification is located in the upper left-hand corner.

2. *Click* ***Next.*** *The following screen appears:*


Auto Setup Package software Version 2.00.0018
Select Features
Choose the features Setup will install.
Select the features you want to install, clear the features you do not want to install.
IDE 36175 K
Device 62540 K
Description
ATI Software Package Version 8.082-041130a
Release Date : 2005/01/04
Space Required on C: 98715 K
Space Available on C: 6821104 K
InstallShield
< Back
Next >
Cancel

3. *Check the box next to the items you want to install. The default options are recommended.*

4. *Click* ***Next*** *run the Installation Wizard. An item installation screen appears:*

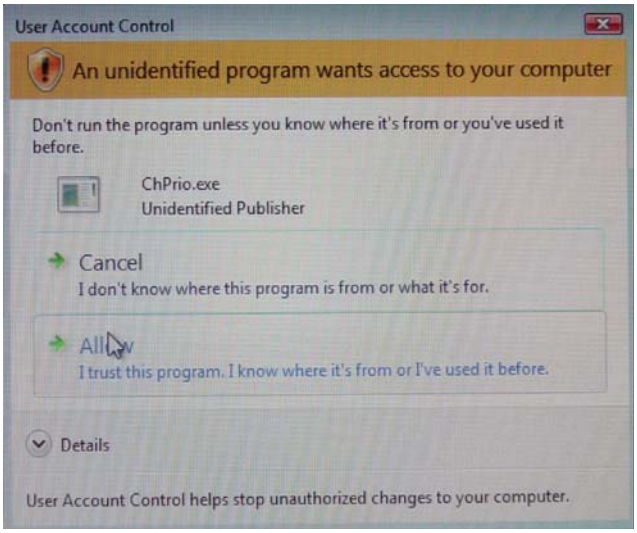

ATI Software
Welcome to the InstallShield Wizard for ATI Software
The InstallShield® Wizard will install ATI Software on your computer. To continue, click Next.
< Back
Next >
Cancel

5. *Follow the instructions on the screen to install the items.*

1. Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

2. During the Windows Vista Driver Auto Setup Procedure, users should use one of the following two methods to install the driver after the system restart.

Windows Vista/7 will appear below UAC (User Account Control) message after the system restart. You must select "Allow" to install the next driver. Continue this process to complete the drivers installation.


User Account Control
An unidentified program wants access to your computer
Don't run the program unless you know where it's from or you've used it before.
ChPrio.exe
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details
User Account Control helps stop unauthorized changes to your computer.

Manual Installation

Insert the disk in the DVD-ROM/CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

These software(s) are subject to change at anytime without prior notice. Please refer to the support disk for available software.

This concludes chapter 4.

Chapter 5
Hybrid Graphics® Technology Support

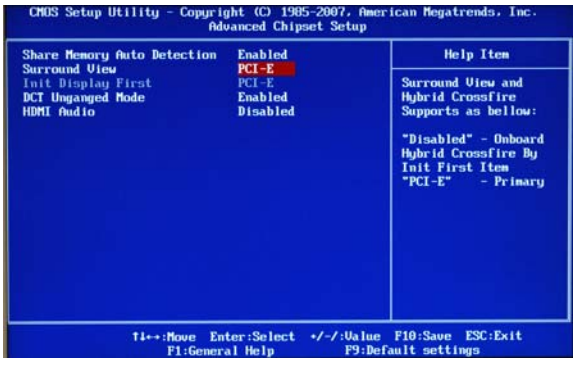
Hybrid Graphics® Technology

The Hybrid Graphics® technology provides significant display performance boost to AMD-based systems by inserting the external PCI Express graphics card and enabling both the discrete GPU and the AMD785G graphics core to render simultaneously in Hybrid CrossFire™ mode.

Follow the steps below to start the Hybrid Graphics® technology.

1.Insert a graphics card (which can be used for Hybrid Graphics® technology, such as HD3400 series) into the **PCIEX16** slot.
Make sure that the card is properly seated on the slot.

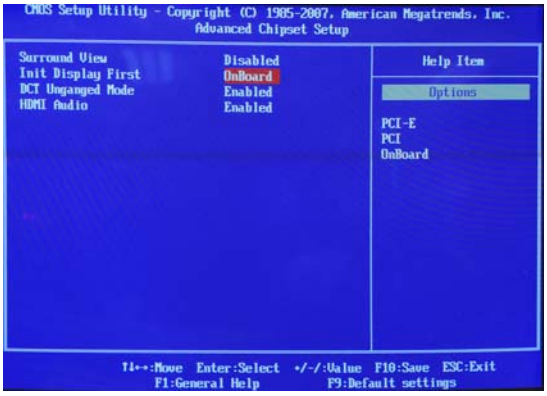
2. For Hybrid Graphics®, if display by PCI-E, you must enter the BIOS, set the *Surround View* in *Advanced Chipset Setup* to **PCI-E**. Then press F10 to save the configuration and exit the BIOS. After entering OS, enter *Catalyst Control Center* to enable Hybrid CrossFire™.


CMOS Setup Utility - Copyright (C) 1985-2007, American Megatrends, Inc.
Advanced Chipset Setup
Share Memory Auto Detection Enabled
Surround View PCI-E
Init Display First PCI-E
DCT Unganged Mode Enabled
HDMI Audio Disabled
Help Item
Surround View and Hybrid Crossfire Supports as bellow:
"Disabled" - Onboard Hybrid Crossfire By Init First Item
"PCI-E" - Primary
↑↓←→:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Default settings

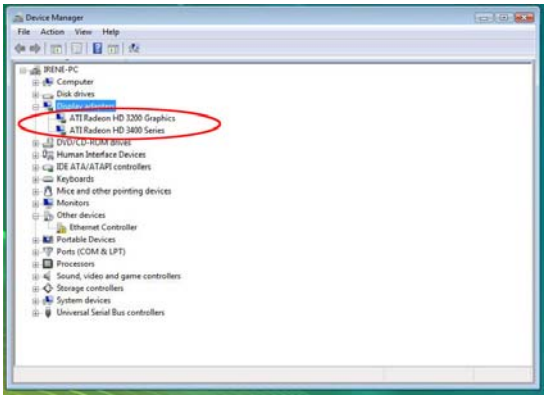
Note: SurroundView™ provides the power and convenience of multiadapter, multimonitor support for computers that use a PCI-E based graphics card in conjunction with ATI integrated graphic processors. And there are two options: Disabled and PCI-E.

If *SurroundView™* set to **Disabled**, and *Init Display First* set to **OnBoard**, SurroundView™ will be Enabled by Catalyst Control Center based on cancel the *Enable CrossFire™* option.

While if display by OnBoard, you must enter the BIOS, set the *Init Display First* in *Advanced Chipset Setup* to **OnBoard**. Then press F10 to save the configuration and exit the BIOS. After entering OS, enter *Catalyst Control Center* to enable CrossFire™.



3. Click with your right mouse button on *My Computer*, then click the option *Manage* and choose the *Device Manager*, finally, click the Display Adapters. The following screen appears. Be sure that the external ATI graphics (ATI Radeon HD 3400 Grapics) and Onboard graphics (ATI Radeon HD 3200 Series) are both displaying in the Display adapters.



4. Enter Catalyst Control Center, you can see the option of *CrossFire™*, click it and select *Enable CrossFire™*, then Hybrid Graphics® starts.

Catalyst Control Center
View
Hotkeys
Profiles
Preferences
Help
Graphics Settings
Welcome
Information Center
Displays Manager
Display Options
Monitor Properties 1
3D
Color
Avivo™ Video
ATI Overdrive™
CrossFire™
CrossFire™
Graphics Adapter :
1 ATI Radeon HD 3400 Series [BenQ FP222WH]
CrossFire™ Settings
CrossFire™ delivers exceptional performance on a single display by combining the processing power of two or more Graphics Processing Units (GPUs).
Enable CrossFire™
When enabling CrossFire™, it is highly recommended that you leave Catalyst® A.I. in the "Standard" position. Visual corruption or application issues may be seen in the Catalyst® A.I. "Advanced" position.
Click on 3D in the navigation tree to review or change either of these 3D settings.
CrossFire™ has now started. When you disable this feature, you will need to restore your previous display settings (creating a profile will make this easier).
For more information, press F1
ATI
RADEON
GRAPHICS
Basic...
OK
Apply
Discard
Defaults

To disable Hybrid Graphics®, please make sure to cancel *Enable CrossFire™* in *Catalyst Control Center* firstly.

Memo

Chapter 6
Setting Up eJIFFY

Introduction

eJIFFY is a fast boot program under Linux. Instead of waiting Windows O.S to start execution, eJIFFY is ready to provide users the instant enjoyment on web browsing, photo review and online chat just within several seconds after boot up.

Note: According to your motherboard uses DVD or CD, the installation may different,please refer the following installation page for more detailed information.

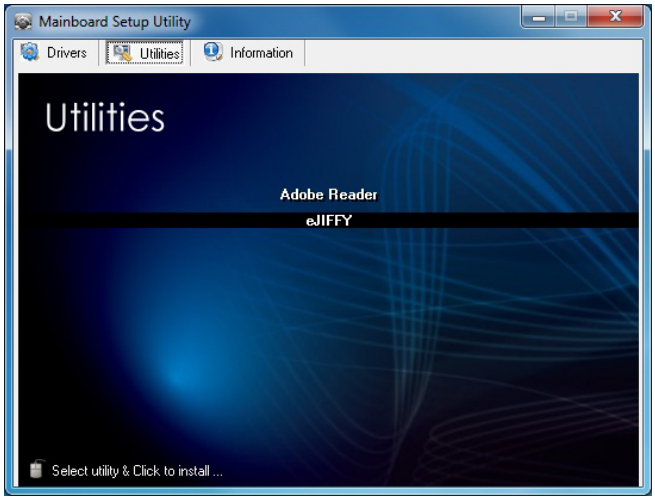
Version: 3.0

Installation and BIOS Setup

DVD Activation

Finish the DVD utility setup, and then set the BIOS to complete eJIFFY activation.

1. Insert ECS software utility DVD and enter below "Utilities" screen. Click eJIFFY feature item to install.



2. Follow the onscreen instructions to finish eJIFFY setup. Restart your computer after you finish.

Setup - eJIFFY
Welcome to the eJIFFY Setup Wizard
This will install eJIFFY on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

Setting Up eJIFFY

3. Press <DEL> or click the BIOS Setup button on the post screen to enter the BIOS setup page after boot up.

4. And then enter the *Advanced Setup* page to enable the item *ECS eJIFFY Function*. Press F10 to save the configuration and exit. Restart your computer.

CMOS Setup Utility - Copyright (C) 1985-2007, American Megatrends, Inc.
Advanced Setup
HT Frequency Auto Auto
AMD C8Q Enabled
Quick Power on Self Test Enabled
Boot Up Numlock Status On
LOGO Display Enabled
APIC Mode Enabled
1st Boot Device ARY01 NVIDIA SPAN 1
2nd Boot Device CD/DVD
3rd Boot Device Removable Dev.
Hard Disk Drives Press Enter
Boot Other Device Yes
ECS eJIFFY Function Enabled
Restore Default Settings No
Help Item
Options
Disabled
Enabled
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Load Default Settings

Note: 1. eJIFFY is available in SATA/IDE/AHCI mode. It does not support RAID configuration and the onboard 34-pin floppy drives.

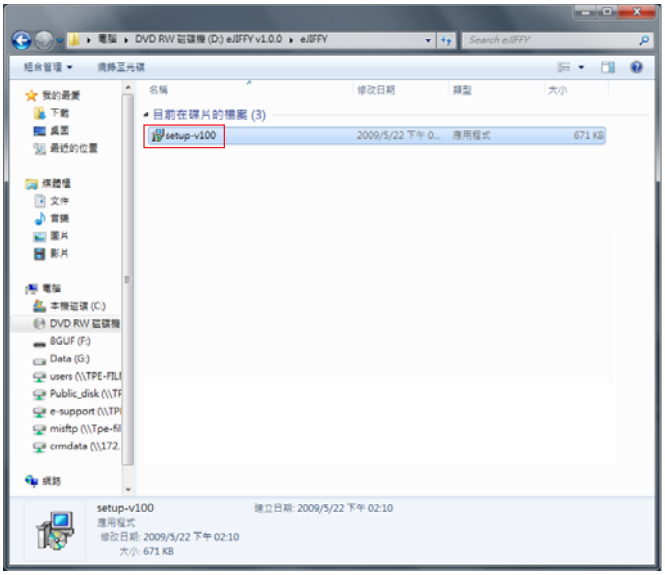
2. Please refer to ECS website for new eJIFFY application updates.

CD Manually Setup

You need to finish the CD installation first before setting the BIOS.

1. Insert the eJIFFY CD in the CD-ROM drive. And follow the onscreen instructions to finish the OS installation.

2. Enter My Computer to find the eJIFFY setup program.

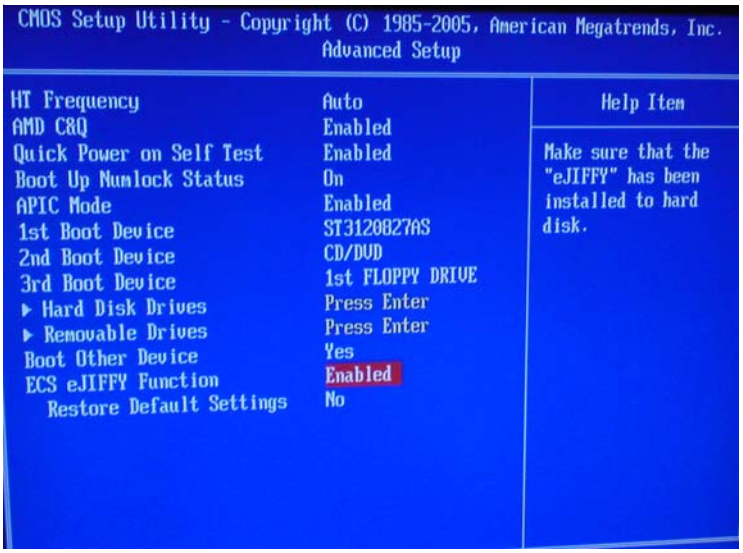


3. Click the setup button to run the eJIFFY software installation program, restart your computer after you finish.

Setup - eJIFFY
Welcome to the eJIFFY Setup Wizard
This will install eJIFFY on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

4. Press <DEL> or click the BIOS Setup button on the post screen to enter the BIOS setup page after boot up.

5. And then enter the *Advanced Setup* page to enable the item *ECS eJIFFY Function*. Press F10 to save the configuration and exit. Restart your computer.

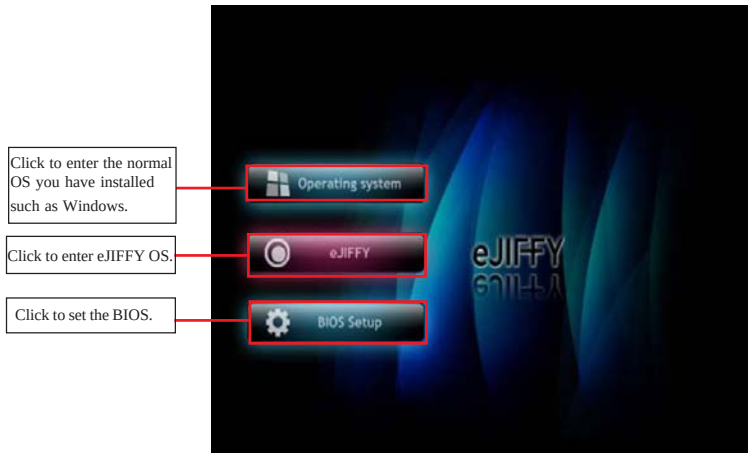

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Advanced Setup
HT Frequency Auto
AMD C&Q Enabled
Quick Power on Self Test Enabled
Boot Up Numlock Status On
APIC Mode Enabled
1st Boot Device ST3120827AS
2nd Boot Device CD/DVD
3rd Boot Device 1st FLOPPY DRIVE
Hard Disk Drives Press Enter
Removable Drives Press Enter
Boot Other Device Yes
ECS eJIFFY Function Enabled
Restore Default Settings No
Help Item
Make sure that the "eJIFFY" has been installed to hard disk.

Note: 1. eJIFFY is available in SATA/IDE/AHCI mode. It does not support RAID configuration and the onboard 34-pin floppy drives.

2. Please refer to ECS website for new eJIFFY application updates.

Entering eJIFFY

The post screen appears within several seconds after boot up and it has three buttons on it, Operating system, eJIFFY and BIOS Setup.


Click to enter the normal OS you have installed such as Windows.
Click to enter eJIFFY OS.
Click to set the BIOS.
Operating system
eJIFFY
BIOS Setup
eJIFFY

If you click eJIFFY, the following screen will appear. And If you make no choice it will enter the normal OS automatically after ten seconds.

Feature Icons

The following illustration shows the main feature icons that eJIFFY provides on the menu.

eWeb: Firefox for web browsing/webmail and watching flash video.

ePix: Photo viewing.

ePal: On-line chat tool to use the most popular IMs in the world. (MSN, ICQ, AIM, etc.)

Shows ePal on-line connection status.

Shut Down/Restart: Ends your session and turns off the computer./Ends your session and restart the computer..

Click once to connect the storage disk to your computer. Click for the second time to remove your storage disk safely. (please refer to the FAQ for more usage information.)

Shows the network connection status.

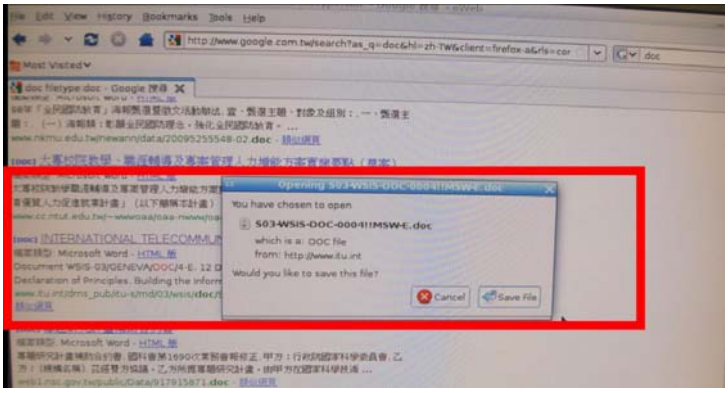
Input Method Settings:
Click to change the default settings of language inputs. It is recommended to use the default settings and do not change the language method in case any inconvenience occurs with the changes.

Usage FAQ

eWeb: Firefox for web browsing/webmail and watching flash video.

Q1: How to download files to hard disk through eWeb?

Click on the file link directly. Then select “Save File” in the pop-up window.



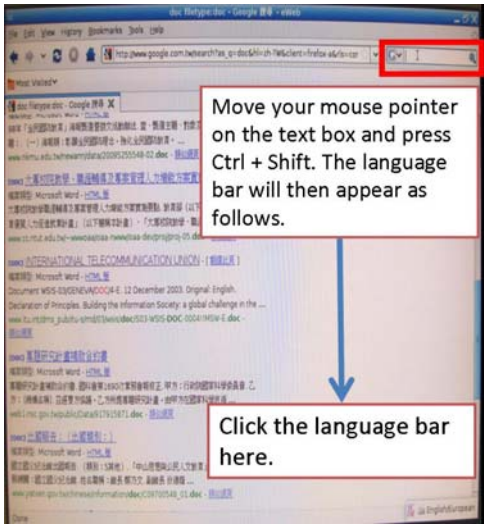
Note: 1. Before downloading files, please “mount” the storage devices to make sure the device is connected with eJIFFY interface. (Please refer to the usage FAQ to mount devices)

2. eWeb does not support Office Viewer/Reader/Writer format under eJIFFY interface. Please enter the Operating System to open Office files.

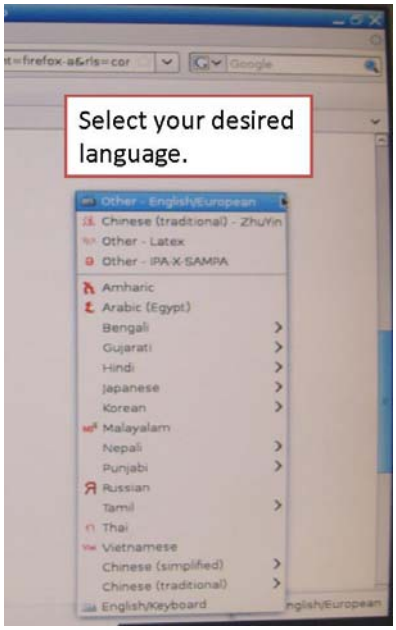
3. eWeb supports to open video/audio files online in Flash player format. Due to firefox limitation, the browser does not support files in Real player or Media player formats.

Q2: How to switch to different languages settings?

Step1.


Move your mouse pointer on the text box and press Ctrl + Shift. The language bar will then appear as follows.
Click the language bar here.

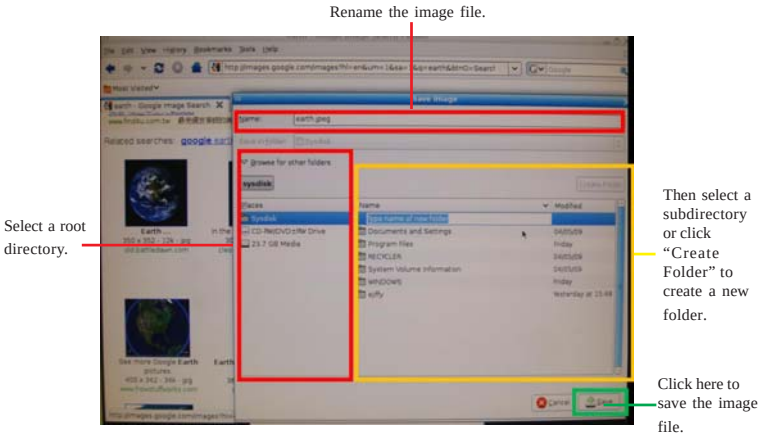
Step2.



Q3: How to save image file through eWeb?

1. Select the image you want to save and press the right key of your mouse to show the menu, then click the option " Save Image As" from the menu.

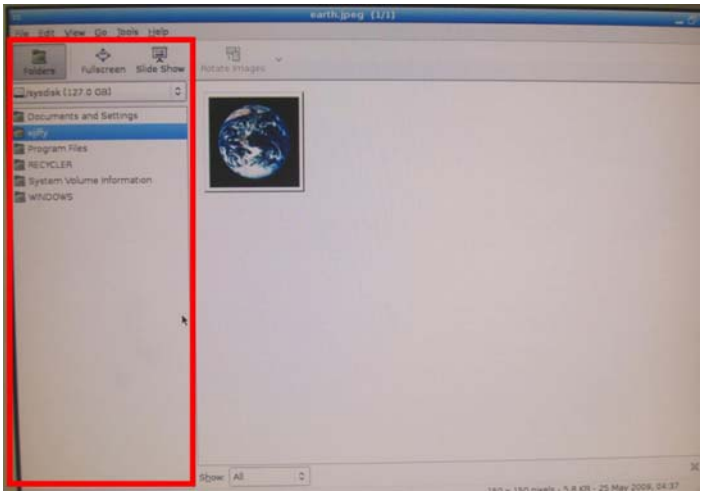
2. Then the "Save Image" window appears. You may rename the image file in the "Name" column and save the file in a folder as the following picture shows.


Rename the image file.
Select a root directory.
Then select a subdirectory or click "Create Folder" to create a new folder.
Click here to save the image file.

ePix: Photo viewing.

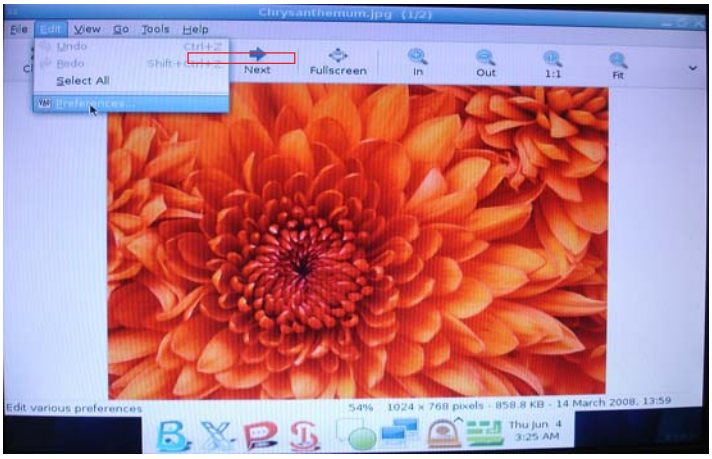
Q1: How to find image files saved in hard disk through ePix?

Enter the ePix window, then click the icon “Folder” located in the upper left-hand corner, then follow the path for the files you have saved to view the image files.

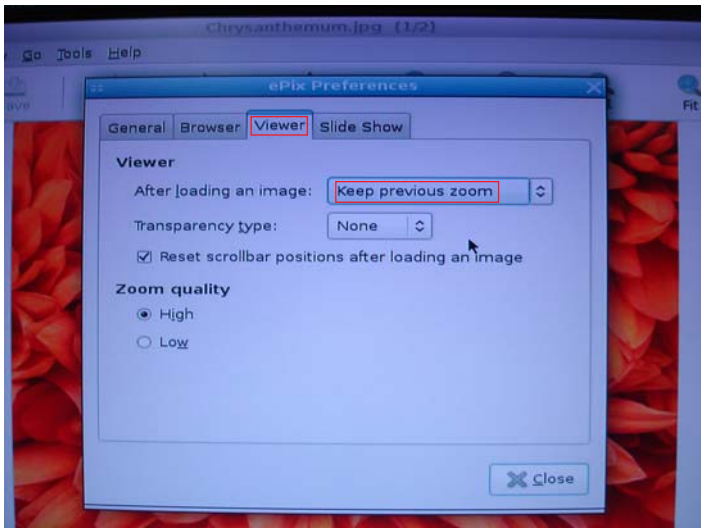


Q2: How to use the fit function under slide show?

1. Click “Edit” and select “Preferences” option from the menu.



2. Click “Viewer” and choose “Keep previous zoom” in “After loading an image”. Close the window and you can use the fit function under slide show now.



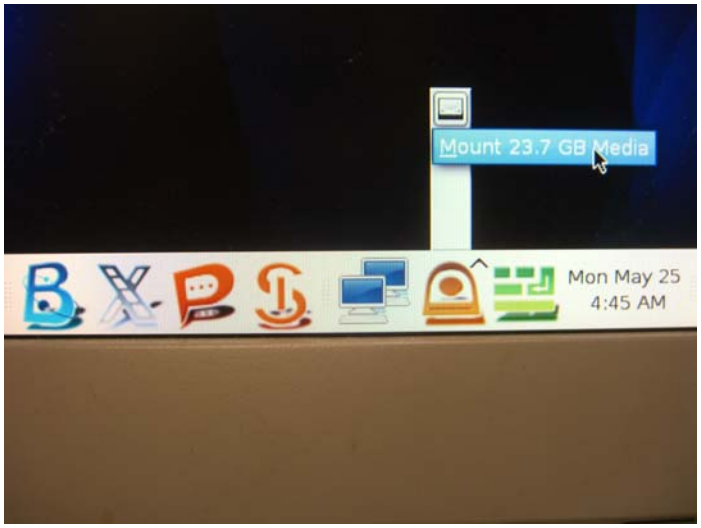
Note: ePix supports to view image files only. It cannot support Office Viewer or other forms beside image files. Supported image types are: BMP, JPEG, GIF (including GIF animations), PNG, TIFF, ICO and XPM.

Mount/Unmount Disk.

Q1: What does it mean for "Mount Disk"?

"Mount" means to connect the storage devices to eJIFFY interface.

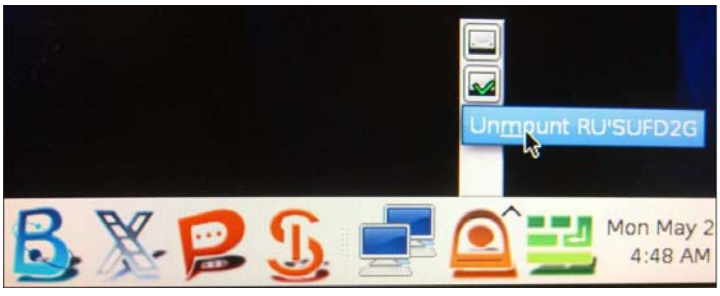
After plugging the external device to the computer such as USB drives, a new disk icon will appear as the following picture shows. Please click the "mount" prompt on the icon. It will change to to show the device is detected successfully.



Q2: What does it mean for "Unmount Disk"?

"Unmount" is to safely remove the storage devices.

To unplug the external storage devices such as USB drives, users need to clik the "Unmount" prompt as the following picture shows, then the icon will change to , you can remove the device now.



Memo

Chapter 7
Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips.

a) System does not power up and the fans are not running.

1.Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. For Intel platforms check the pins on the CPU socket for damage or bent. A bent pin may cause failure to boot and sometimes permanent damage from short circuit.

5. Check the 12V power connector is connected to the motherboard.

6. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

b) Power is on, fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.
2. Check the VGA adapter card (if applicable) is inserted properly.
3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
   a. continuous 3 short beeps : memory not detected
   b. 1 long beep and 8 short beeps : VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Ensure the CPU fan is working properly.
2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

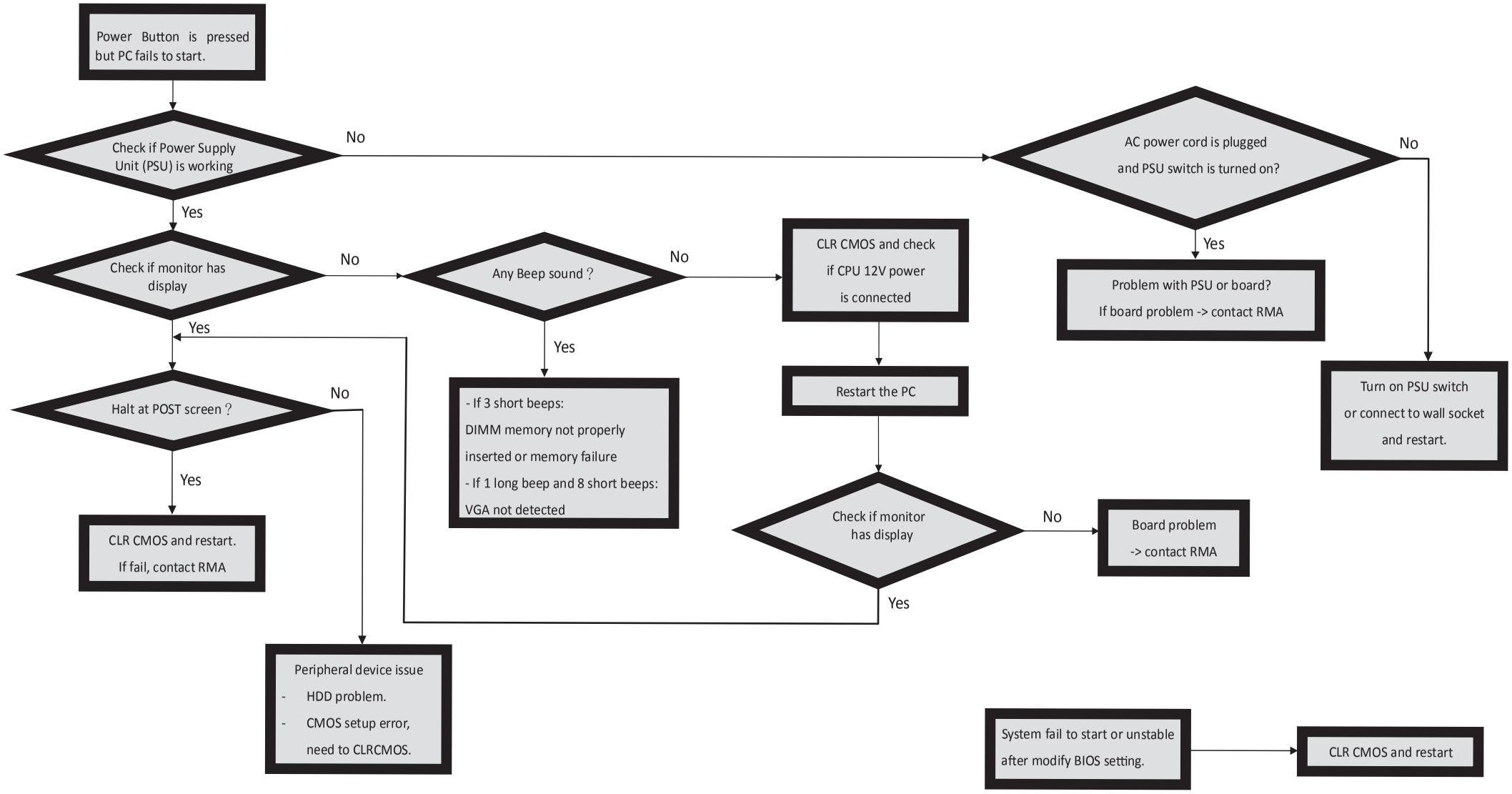
4. Remove the hard drive, optical drive or DDR memory to determine which of these component may be at fault.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.
2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.
3. Routinely clean the CPU cooler fan to remove dust and hair.
4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.
5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its lifespan.
6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart


Power Button is pressed but PC fails to start.
Check if Power Supply Unit (PSU) is working
No
AC power cord is plugged and PSU switch is turned on?
No
Yes
Problem with PSU or board? If board problem -> contact RMA
Turn on PSU switch or connect to wall socket and restart.
Yes
Check if monitor has display
No
Any Beep sound ?
No
CLR CMOS and check if CPU 12V power is connected
Yes
- If 3 short beeps: DIMM memory not properly inserted or memory failure
- If 1 long beep and 8 short beeps: VGA not detected
Yes
Restart the PC
Yes
Halt at POST screen ?
No
Yes
CLR CMOS and restart. If fail, contact RMA
Check if monitor has display
No
Board problem -> contact RMA
Yes
Peripheral device issue
- HDD problem.
- CMOS setup error, need to CLRCMOS.
System fail to start or unstable after modify BIOS setting.
CLR CMOS and restart

Memo